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Exhibit C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michael Meyrick Burrell and
Keith Stuart Blundy

Serial No.: 08/284,199

Filed: August 2, 1995

Art Unit: 1804

For: MODIFICATION OF PLANT METABOLISM

Examiner: D. Fox

DECLARATION UNDER RULE 37 CFR 1.132

I, Michael Meyrick Burrell, of 20 Histon Road, Cottenham, Cambridge, England, DO SOLEMNLY and SINCERELY DECLARE as follows:

1. I am the Michael Meyrick Burrell who is named as being an Applicant in respect of United States Patent Application Serial No. 08/284,199.
2. I am a scholar of Cambridge University and hold a PhD in Plant Biochemistry and a Degree in Natural Sciences with honours in Botany.
3. I initiated and supervised the conduct of the experimental procedures now to be related.
4. According to a first experimental procedure a chimaeric gene was constructed which contained the

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antisense coding sequence for potato acid invertase and the antisense coding sequence for potato sucrose phosphate synthase (SPS). To each of these two sequences was attached a patatin promoter, to ensure potato tuber specific expression of the deoxyribonucleic acid, and a nos terminator. Potato plants were transformed with this chimaeric gene containing the two sequences. The transformed potato plants were grown in a glasshouse alongside non-transformed control potato plants and tubers were harvested from both populations. Sugars were recovered from the harvested tubers by aqueous extraction after killing in boiling 80% ethanol. Sucrose, glucose and fructose were then determined enzymatically as described by Morrell, S. and ap Rees, T. (1986) *Phytochemistry* 25 : 1579-1585. All transformed plants analysed were shown by polymerase chain analysis to contain the introduced gene. The table below shows, for the tubers of the test and control populations, the mean values of the sugars and the ratio of sucrose to reducing sugar (glucose plus fructose).

	Glucose	$\mu\text{moles/g fr. wt.}$ Fructose	Sucrose	Ratio of sucrose/glucose + fructose
Control	20.4	11.9	10.7	0.33
Antisense Invertase/SPS	7.8	2.2	9.8	1.44
Least significant difference	14.02	7.29	4.63	1.09

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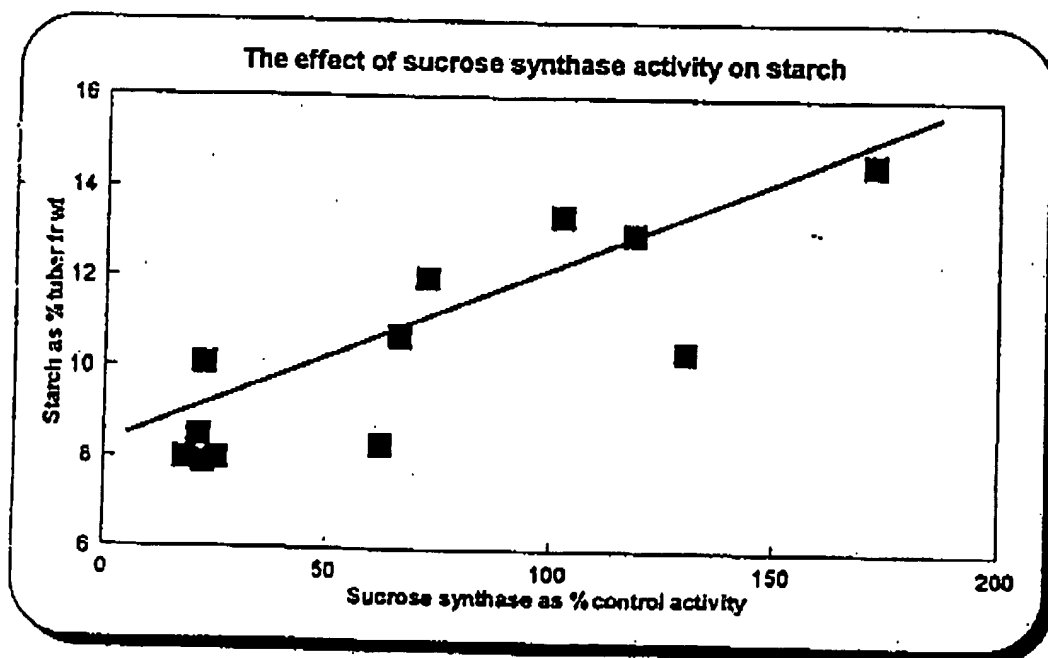
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5. The statistical computer program Genstat was used to analyse the results from the first experimental procedure. From this analysis calculation was made of the difference that would need to be obtained between the controls and the transformed test population for a significant result. In respect of fructose and the ratio of sucrose to reducing sugar the differences between the control values and the values for the transformed population are greater than the calculated respective least significant differences. Therefore the results for fructose and the ratio of sucrose to reducing sugar are significant at the Fisher P value of 0.05. For glucose the result is significant at a Fisher P value of 0.10.
6. These statistically significant results for the transformed potato plants are advantageous in respect of certain forms of potato processing. Moreover, these results were not accompanied by any deleterious phenotypic effects in the transformed potato plants.
7. According to a second experimental procedure, two chimaeric genes were constructed. The first chimaeric gene contained the potato sucrose synthase coding sequence in the sense orientation attached to a patatin promoter and the second chimaeric gene contained the same coding sequence in the antisense direction and a patatin promoter. Each of these chimaeric genes included a nos terminator. In other

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words, the two chimaeric genes were identical except for the orientation of the coding sequence. Potato plants, a proportion of which were transformed with the first chimaeric gene and the remainder of which were transformed with the second chimaeric gene, were grown in the field alongside non-transformed control plants, and tubers from all three of these populations were analysed for their starch content and the activity of sucrose synthase. The values of sucrose synthase activity were then expressed as a percentage of the value thereof in the control plants and plotted against the values for starch content (as shown below). A line of best fit was calculated from the points and gives a significant correlation of 0.58.



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8. It is thus clearly shown that there was a significant correlation between sucrose synthase activity and starch content in the transformed potato tubers. This relationship obtains whether the chimaeric gene contains the coding sequence in the sense or the antisense direction. Therefore, despite variation between individual transgenic plants, the result is predictable and consistent. The result is also commercially important since the starch content required in the tuber for different processing varies.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such wilful false statements may jeopardise the validity of the application or any patent issuing thereon.

Signature: Michael H. Bunell

Date: 28 February 1997